In respect to the examiner's 35 USC 112 objection to claims 1 and 18 relative to the term "bias means", applicant has amended this claim to clarify that the spring is the bias means.

It is believed that these modifications meet the examiner's 35 USC 112 objections to the pertinent claims.

In respect to the examiner's 35 USC 102 rejection of claims 1-3, 6-7, 9-10, 12-14, 18, 20-21, 23-2444, 26-27, and 33 under 35 USC 102(e) as being anticipated by Muramoto U.S. Patent 6,405,837, applicant respectfully requests the examiner's reconsideration of this rejection.

The basis for this request for reconsideration is that Muramoto teaches of a hydraulic brake while the present application teaches of a mechanical brake.

The present application includes specific differentiations between these two types of brakes. For example, the background of the invention section teaches that a "mechanical brake" is activated through some sort of wire or cable interconnection from a brake pedal to a lever arm, the physical movement of which activates the mechanical brake (pg 1 lns 9-12). The present application distinguishes this type of brake from a "hydraulic system" wherein the operative forces are transferred through the selective pressurization of a closed hose connected to a remote brake cylinder to apply the

brake (pg 1 lns 13-17). This differentiation is important because the cost of hydraulically released, spring applied brake mechanisms are sufficiently high that most manufacturers use alternative mechanisms (pg 2 lns 1-7).

This use of a mechanical brake is persistent throughout the application. For example, it is taught that the activating mechanism is designed to selectively alter the state of "a mechanical brake" (pg 4 lns 21-25). The mechanical brake itself is designed to "mechanically" provide for the activating and/or deactivating force between the rotating shaft and the frame of an associated stationary device (pg 5 lns 9-14). In the preferred embodiment disclosed, the mechanically activated brake is a drum brake (pg 6 lns 17+). In the preferred embodiment of the present application, the activating means for the brake is a lever 80 (pg 7 lns 14+).

To clarify this difference, applicant has amended the pertinent claims to better distinguish over the activating mechanism from the mechanical brake itself, thus to clarify the distinctiveness over a hydraulic brake just as that shown in Muramoto.

In respect to the examiner's rejection of claims 1-2, 4, 6, 9-10, 12, 15-20, 23-24, 26, 28-29, 31, and 34 under 35 USC 102(b) as being anticipated by Sterns U.S. Patent

1,988,986, applicant, again, respectfully requests the examiner's reconsideration of this rejection.

The reason for the request for reconsideration is that Sterns teaches of a purely mechanical drum brake operated by the shaft 6 and the cam 5 (col 2 lns 42-47, 52-56). The items cited by the examiner are in a separate flywheel-operated anti-skid assembly which is separately connected to such brake. When this flywheel is active, it reduces the compression of the spring 9 and thus to reduce the pressure applied by the spring 9 (pg 2 col 2 ln 72-pg 3 col 1 ln 3). The purpose of the oil is to prevent any quick return of the piston (pg 3 col 2 lns 8-16, 55-60). The device thus uses a flywheel 10 in order to modify the braking of the device (pg 2 col 2 lns 30-35), and its modification is to release the brake (pg 4 col 1 lns 15-28).

The skid preventer of Sterns can be completely eliminated without compromise to the actual braking which is provided by the usual braking shoes (pg 2 col 1 lns 41-56). In view of the fact that Sterns is directed to providing a skid preventer to a brake motor vehicle, with the brake being separately manually controlled, applicant believes that the currently pending claims differentiate over this reference.

In view of the above, applicant believes that the presently pending claims are allowable over the cited art of record.

Claims 5, 11, 22, 25, and 30 have been rewritten into their indicated allowable condition.

Favorable action is solicited.

Respectfully submitted,

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A T T A C H M E N T

Claim 1. An actuating mechanism for a mechanical brake, the brake having a rotatable shaft rotatively supported to a frame by an intermediate member, the brake comprising a friction surface, said friction surface being connected to the shaft,

a brake member, said brake member being movably connected to the intermediate member,

a mechanical activator, said mechanical activator being mounted to said intermediate member for movement between first and second positions, one of said first or second positions moving said brake member into contact with said friction surface to impede the rotation of the shaft,

a spring, means to connect said spring to said intermediate member to bias said mechanical activator in one of said first or second positions,

a cavity, said cavity being in said intermediate member,

a piston, said piston being in said cavity to define a chamber,

connect means to connect said piston to said spring and pressurization means to pressurize said chamber to move said spring from its position biasing said mechanical activator

in one of said first or second positions to the other of said first or second positions.

Claim 2. The brake of claim 1 characterized in that said spring is in said cavity.

Claim 3. The brake of claim 2 characterized in that said spring is on the opposite side of said mechanical activator from said piston.

Claim 4. The brake of claim 1 characterized in that said mechanical activator is a pivoting lever.

Claim 5. The brake of claim 3 characterized in that said mechanical activator is a pivoting lever.

Claim 6. The brake of claim 1 characterized in that said piston includes a pressure plug and a spring plug together with a means interconnecting said spring plug to said pressure plug,

said pressure plug being adjacent to said chamber, and said spring plug being adjacent to said spring.

Claim 7. The brake of claim 6 characterized in that said mechanical activator includes a section located between said pressure plug and said spring plug within said bypass means.

Claim 8. The brake of claim 7 characterized in that said mechanical activator is a lever, and said lever being in contact with said spring plug.

Claim 9. The brake of claim 1 characterized by the addition of a deactivating means, and said deactivating means deactivating said pressurization means.

Claim 10. The brake of claim 9 characterized in that said deactivating means is between said spring and said intermediate member.

Claim 11. The brake of claim 9 characterized in that said deactivating means is a rotating cam.

Claim 12. The brake of claim 1 characterized by the addition of a stop, said stop being located to stop movement of said spring beyond said other of said first or second positions.

Claim 13. The brake of claim 1 wherein the shaft is rotated by a hydraulic pressure motor with a pressurized input and characterized by the addition of line means to fluidically connect said chamber pressurized line of the hydraulic pressurized motor.

Claim 14. The brake of claim 13 wherein the hydraulic pressurized motor has two inputs either one of which might be pressurized and characterized by said line means being connected to both inputs such that the pressurization of either will pressurize said chamber to move said piston.

Claim 15. The brake of claim 1 characterized in that the shaft has an axis, said cavity has an axis, and said axis of said cavity being substantially perpendicular to said axis of the shaft.

Claim 16. The brake of claim 15 characterized in that said axis of said cavity being offset from said axis of said shaft.

Claim 17. The brake of claim 16 characterized in that said intermediate member is substantially of a single piece construction.

Claim 18. A brake for a rotatable shaft rotatively supported to a frame by an intermediate member, the brake comprising a friction surface, said friction surface being connected to the shaft,

a brake member, said brake member being movably connected to the intermediate member,

a mechanical activator, said mechanical activator being mounted to said intermediate member for movement between first and second positions, one of said first or second positions moving said brake member into contact with said friction surface to impede the rotation of the shaft,

a cavity, said cavity being in said intermediate member between the mechanical activator and the other end of said cavity, said cavity having two ends, said mechanical activator extending into said cavity,

a spring, said spring being in said cavity between said mechanical activator and one end of said cavity,

means to connect said spring to one end of said cavity to bias said mechanical activator in one of said first or second positions,

a piston, said piston being in said cavity to define a chamber, connect means to connect said piston to said spring and pressurization means to pressurize said chamber to move said spring from its position biasing said mechanical activator

in one of said first or second positions to the other of said first or second positions.

Claim 19. The brake of claim 18 characterized in that said mechanical activator is a pivoting lever.

Claim 20. The brake of claim 18 characterized in that said piston includes a pressure plug and a spring plug together with a means interconnecting said spring plug to said pressure plug,

said pressure plug being adjacent to said chamber, and said spring plug being adjacent to said spring.

Claim 21. The brake of claim 20 characterized in that said mechanical activator includes a section located between said pressure plug and said spring plug within said bypass means.

Claim 22. The brake of claim 21 characterized in that said mechanical activator is a lever, and said lever being in contact with said spring plug.

Claim 23. The brake of claim 21 characterized by the addition of a deactivating means, and said deactivating means deactivating said bias means.

Claim 24. The brake of claim 23 characterized in that said deactivating means is between said spring and said one end of said cavity.

Claim 25. The brake of claim 23 characterized in that said deactivating means is a rotating cam.

Claim 26. The brake of claim 18 characterized by the addition of a stop, said stop being located to stop movement of said spring beyond said other of said first or second positions.

Claim 27. The brake of claim 18 wherein the shaft is rotated by a hydraulic pressure motor with a pressurized input and characterized by the addition of line means to fluidically connect said chamber pressurized line of the hydraulic pressurized motor.

Claim 28. A brake actuator for a mechanical brake on a rotating shaft having an axis of rotation, the mechanical

brake having an operating lever movable between first and second positions each producing a different activated condition of the brake,

said brake comprising an actuating mechanism, said actuating mechanism having a cavity with an axis and two ends, said axis of said cavity being substantially perpendicular to and offset from the rotational axis of the shaft, the operating lever of the brake having a part in said cavity,

a spring, said spring being in said cavity extending between an end of said cavity and said part of the operating lever so as to bias said lever in one of the first or second positions,

a piston, said piston being in said cavity between the other end of said cavity and said part of the operating lever,

bypass means bypassing said operating lever to connect said piston to said spring, said piston in said cavity defining a chamber,

and selective means to pressurize said chamber to move said piston against said bias of said spring providing the ability for the operating lever to move to the other of the first or second positions.

Claim 29. The brake of claim 28 characterized by the addition of stop means to prevent the over-compression of said spring.

Claim 30. The brake of claim 28 characterized by the addition of a deactivating cam, said deactivating cam being between said spring and an end of said cavity and said deactivating cam being movable so as to substantially eliminate said bias of said spring on the operating lever.

Claim 31. The brake of claim 28 characterized in that said bypass means includes said piston having two plugs axially spaced in said cavity on either side of said part of the operating lever and a bypass portion connecting said two plugs.

Claim 32. A brake for a rotatable shaft rotatably supported to a frame by an intermediate member, the brake comprising a mechanical activator,

a cavity, said cavity being in said intermediate member, means for said mechanical activator to alter the condition of said brake, said cavity having an end,

a deactivating cam, said deactivating cam being located at said end of said cavity, said deactivating cam having an activating and a deactivating surface,

a spring, said spring being in said cavity between said deactivating cam and said mechanical activator,

and selective means to move said cam engaging said activating surface with said spring to spring bias said mechanical activator in respect to said end of said cavity.

Claim 33. A brake for rotatable shaft rotatably supported to a frame by an intermediate member, the brake comprising a mechanical activator,

a cavity, said cavity being in said intermediate member, said mechanical activator extending into said cavity, means for said mechanical activator to alter the condition of said brake,

a piston, said piston being in said cavity, fluid means to move said piston from one to another position, said piston having a pressure plug and a spring plug interconnected by a bypass section,

said mechanical activator being in said bypass section, and means to bias said piston in a position in respect to said cavity.

Claim 34. A brake for a rotatable shaft rotatably supported to a frame by an intermediate member,

the brake comprising a cavity, said cavity being in the intermediate member,

a piston, said piston being in said cavity defining a chamber,

a brake including a friction surface connected to the shaft and shoes connected to the body thereof and a mechanical operating lever as an integral unit,

means to mount said body of said brake to said intermediate unit with said piston being in contact with said mechanical operating lever, and means to pressurize said chamber.